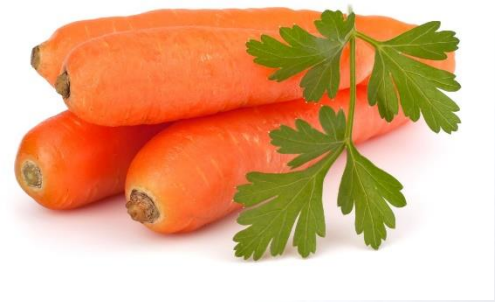
Functional Dietary Fibres



Dietary Fibre Definition

- Dietary fibre is the edible parts of plants or analogous carbohydrates that are resistant to digestion and absorption in the human small intestine with complete or partial fermentation in the large intestine.
- Dietary fibre includes polysaccharides, oligosaccharides, lignin and associated plant substances. Functional fibres consist of isolated, non-digestible carbohydrates that have beneficial effects in humans.
- Traditionally dietary fibres are classified into 2 major categories:
  - water soluble fibres
  - water insoluble fibres

Nutritional Claims

- High in Fibre

  the product contain at least 6 g of fibre per 100g or at least 3 g of fibre per 100 kcal
- Source of Fibre

  the product contains at least 3 g of fibre per 100g or at least 1.5 g of fibre per 100 kcal
- Low Energy

  the product contains less than 40 kcal/ 100g (170 kJ) and less than 20 kcal/ 100 ml (80 kJ)
- Energy-reduced

  the energy value must be reduced by at least 30 %, with an indication of the characteristics, which makes the food reduced in its total energy value

Source: Proposal for a Regulation of the European Parliament and the Council on Nutrition and Health claims made on Food (COM 2003 (424), Bruxelles 2003)

Nutritional Aspects

Diets naturally high in fibre are considered to deliver several important physiological benefits:

- Prevention of constipation
- Improvement of gastro-intestinal health
- Positive modulation of the colonic micro-flora
- Reduction of the risk of developing colon cancer
- Reduction of blood pressure
- Regulation of blood cholesterol level
- Enhancement of effectiveness of weight-reduction diets

Dietary Fibre Consumption

The Academy of Nutrition and Dietetics (AND) recommends a minimum of 20-35 g / day for a healthy adult depending on calorie intake (e.g. a 2,000 Cal / 8,400 KJ diet should include 25 g fibre/day).

The recommendation for children is that the intake should equal age in years plus 5 g /day (e.g. a 5 year old should consume 10 g/day).

The British Nutrition Foundation has recommended a minimum fibre intake of 18 g / day for healthy adults.

Why using VIDOFIBRES?

- High nutritional value
- Neutral organoleptic properties
- Marketing and labelling aspects
- Improved technological functions
- High water binding capacity
- Economical advantages

VIDOFIBRES BF sugar beet fibre

- **VIDOFIBRES BF** sugar beet fibre is produced at the factory in Eschenz / Switzerland.
- Made from 100% natural sugar beet pulp after the sugar extraction.
- Grades of low, medium and high water binding capacity of 3.5 - 13 g water per 1 g fibre depending on type (BF 5 / BF 10 / BF 12 types)*.
- The sugar beet fibre meets all current legislations, it is a natural, clean label, gluten-free, multifunctional dietary food ingredient that provides moisture retention and texture to a variety of food products.

* BF 10 & BF 12 under development

VIDOFIBRES BF

Sugar Beet Fibres - designed for stabilisation, freshness and clean label applications

Name	Quality	Water binding capacity	Particle size
VIDOFIBRES BF 5 A	Standard quality	3.5 - 6 g water/g fibre	min 90% < 0.070 mm
VIDOFIBRES BF 5 C			min 95% < 0.150 mm
VIDOFIBRES BF 5 E			min 95% < 0.5 mm
VIDOFIBRES BF 5 F			min 95% < 2.0 mm
VIDOFIBRES BF 5 G			max 10% < 0.4 mm max 5% > 1.4 mm
VIDOFIBRES BF 5 H			Coarse, not milled
VIDOFIBRES BF 5 Flake			Flakes
VIDOFIBRES BIO BF			

VIDOFIBRES BF

Sugar Beet Fibres - designed for stabilisation, freshness and clean label applications

Name	Quality	Water binding capacity	Particle size
VIDOFIBRES BF 12 C (under development)	Premium quality	11 – 13.5 g water/g fibre	< 0.150 mm
(under development) VIDOFIBRES BF 10 A VIDOFIBRES BF 10 C VIDOFIBRES BF 10 E VIDOFIBRES BF 10 F VIDOFIBRES BF 10 G VIDOFIBRES BF 10 H VIDOFIBRES BF 10 Flake VIDOFIBRES BIO BF	Superior quality	7 - 10 g water/g fibre	 min 90% < 0.070 mm min 95% < 0.150 mm min 95% < 0.5 mm min 95% < 2.0 mm max 10% < 0.4 mm max 5% > 1.4 mm Coarse, not milled Flakes Organic

VIDOFIBRES CF 1525 citrus fibre

- 100% pure Citrus Fibre, from specially treated citrus peels, to loosen the strong bonds between the hemicellulose, pectin, proteins and sugars.
- **VIDOFIBRES CF 1525 C**: fine particle size, min 95% < 0.150 mm (100 Mesh)
- **VIDOFIBRES CF 1525 A**: super-fine particle size, min 90% < 0.070 mm (200 Mesh)
- Enhanced functionality through the expanded fibre matrix.
- Dispersions of VIDOFIBRES CF 1525 in water display a unique soft, non-flowing, stable mousse-like texture, similar to a gelatinized starch slurry, without syneresis and with a smooth, non fibrous mouth-feel.
- Produced in Switzerland.
- High dietary fibre content (min. 70%), high ratio of soluble fibre/pectin (approx. 35%).
- Clean-label, no E-No., labelled as Citrus fibre, fruit fibre, plant fibre or similar.
- Fine, beige/yellowish powder, weak citrus note.
- Natural.
- Gluten-free (< 20ppm).
- Non-GMO.
- GRAS.
- Kosher, Halal.

VIDOFIBRES CF 1525 Functionality

Water binding capacity

- WBC = 12 – 15* (1g fibre binds 12 – 15 g water), in aqueous dispersion with little mixing. *UPI method
- WBC increases strongly to WBC = 20 – 25* and higher, through higher shear forces (high speed mixer, homogenizer), creating a unique soft, non-flowing, stable mousse-like texture similar to a gelatinized starch slurry, without syneresis and with a smooth, non fibrous mouth-feel.
- Water binding capacity comparable to water holding capacity, strong affinity of the fibre to water.

Quick hydration

- VIDOFIBRES CF 1525 starts hydrating immediately after contact with moisture and rapidly absorbs water.

Oil binding capacity

- OBC = 4 (1g fibre binds 4 g of oil).

Viscosity, texture, structure enhancement

- VIDOFIBRES CF 1525 has a relatively low viscosity in water, which strongly increases in dispersions of 3% or higher.
- Produces viscosity and body with smooth and rich texture and structure in products, and stabilizes the water in various food systems.

Emulsion stabilization through water and oil immobilisation.

Gelation: the pectin in VIDOFIBRES CF 1525 is able to gel in high sugar / low pH conditions.

Process stability: VIDOFIBRES CF 1525 demonstrates good heat, pH, salt and shear stability in food products.

VIDOFIBRES KF 15 carrot fibre

- 100% pure Carrot Fibre, from carrot pulp after juice processing.
- **VIDOFIBRES KF 15 C**: fine particle size, min 70% < 0.250 mm (60 Mesh).
- Enhanced functionality through the expanded fibre matrix.
- VIDOFIBRES KF 15 disperses lump-free, quickly and easily, without the need of agitation, in water.
- VIDOFIBRES KF 15 absorbs water quickly. Dispersions in water, after shearing, display a pasty, fibrous, apple-paste like texture, non-flowing, with little syneresis and with a smooth mouth-feel.
- Produced in Germany; standardized, tested and packed in Switzerland.
- High dietary fibre content (min. 60%), high ratio of soluble fibre/pectin (approx. 18%).
- Clean-label, no E-No., labelled as vegetable fibre, plant fibre or similar.
- Fine, light-yellowish powder, slightly sweet taste.
- Natural.
- Gluten-free (< 3ppm).
- Non-GMO.
- GRAS.
- Kosher, Halal.

VIDOFIBRES KF 15 Functionality

Water binding capacity

- WBC = min. 15* (1g fibre binds 15 g water), in aqueous dispersion with little mixing. *UPI method
- WBC increases strongly to WBC = 20 – 25* and higher, through higher shear forces (high speed mixer, homogenizer), creating a pasty, fibrous, apple-paste like texture, non-flowing, with little syneresis and with a smooth mouth-feel.
- Water binding capacity comparable to water holding capacity, strong affinity of the fibre to water.

Quick hydration, high Swelling Capacity

- VIDOFIBRES KF 15 starts hydrating immediately after contact with moisture and rapidly absorbs water, without lumping.
- Expands rapidly after contact with water, and occupies a large space, without mechanical treatment/shearing/mixing

Oil binding capacity

- OBC = 4 (1g fibre binds 4 g of oil).

Viscosity, texture, structure enhancement

- VIDOFIBRES KF 15 has a relatively low viscosity in water, which strongly increases in dispersions of 2% or higher.
- Produces viscosity and body with smooth and rich texture and structure in products, and stabilizes the water in various food systems.

Emulsion stabilization through water and oil immobilisation.

Process stability: VIDOFIBRES KF 15 demonstrates good heat, pH, salt and shear stability in food products.

VIDOFIBRES AF apple fibre

VIDOFIBRES AF apple fibre of UNIPEKTIN Ingredients AG is a natural product made from Swiss apples.

It is produced by a gentle thermal process in Eschenz, Switzerland.

The product meets the new "**Swissness**" Regulations effective from January 1st, 2017.

The apple fibre is especially suitable for bakery products and provides freshness and excellent process properties with an increased yield.

Our Swiss Apple Fibre has an optimal profile of soluble and insoluble fibres. It is gluten-free, clean label and has a high content of minerals and a pleasant fruity taste and flavour.

Our Products – VIDOFIBRES AF

Apple Fibres – designed for excellent performance in nutritional and clean label applications

Name	Quality	Water binding capacity
VIDOFIBRES AF 7 C (under development)	Premium quality	7 g water/g fibre
VIDOFIBRES AF 3 C	Standard quality	3.5 g water/g fibre
VIDOFIBRES BIO AF	Organic quality	

VIDOFIBRES PF pear fibre

Pear Fibre – designed for excellent performance in nutritional and clean label applications

Name	Quality	Water binding capacity
VIDOFIBRES PF 3 C	Standard quality	3 - 4 g water/g fibre
VIDOFIBRES BIO PF	Organic quality	

Application Examples

- Bakery products - better freshness and shelf life, crumb and texture.
- Processed meat - texture and moisture improvement, reduction of cooking loss.
- Beverages - stabilisation of fruit juice, high viscous fibre drinks.
- Cereal Bars - Texture and stability for fibre rich fillings.
- Dairy products - High viscous fibre and yoghurt drinks, cereal yogurt preps.
- Ice cream/sorbets - enhances mix viscosity and melting stability.
- Nutraceuticals - slimming aids, weight management, fibre supplements.
- Pet food - water binding.